

~~repeated cyclic pulling strokes.] at least one pair of cable engaging collets that function to engage said cable on a said pulling stroke and to release said cable on a said recovery stroke; and wherein at least one further pair of collets is provided that function to engage said cable on said recovery stroke and release said cable on said pulling stroke.~~

¹²
~~6.~~ (Once amended) A device as described in claim [5] ¹¹~~2~~ wherein said further pair of collets is engaged within said cable pulling device.

³
~~3.~~ (Once amended) A device as described in claim [2] ²~~2~~ wherein said cable pulling device is formed with a slotted cable insertion means for the sideways insertion of said cable within said cable pulling device.

¹¹
~~11.~~ (Once amended) A device as described in claim [8] wherein the PTR is relatively light weight and portable as a result of using high pressure hydraulics in small hydraulic cylinders] ¹ wherein said mole includes a nose portion being engagable to said cable, a tapered body portion and a replacement pipe engagement portion, said mole further including at least one blade, said tapered body portion acting to initially contact, fracture and expand said pipe for the replacement thereof with a length of replacement pipe, and said blade acting to cut pipe engagement devices encountered by said mole after said pipe has been expanded by said tapered body portion.

¹²
~~12.~~ (Once amended) A device as described in claim [8] ⁷~~7~~ where the weight to pulling force ratio of the PTR is in the range of 2 pounds of weight per ton (2,000 pounds) of pulling force.

1 ⁵~~13~~. (Once amended) A device as in claim ¹⁴~~12~~ wherein [high pressure hydraulics (5,500 to
2 20,000 PSIG) are used to give the PTR the intense pulling power it delivers] the PTR provides a
3 pulling power through the use of hydraulic pressure in the range of 5,500 to 20,000 PSIG.

1 14. (Once amended) [A device as described in claim 1] A device for the trenchless
2 replacement of in-situ pipe, comprising:
3 a mole;
4 a length of cable, said cable being engagable to said mole;
5 a cable pulling device;
6 a cable pulling device mounting frame being releasably engagable to said cable pulling
7 device wherein said cable pulling device [engagement means] mounting frame includes an
8 annulus member including a cable passage bore formed therethrough and a cable insertion slot
9 formed through portions of said annulus member for the sideways insertion of said cable within
10 said cable passage bore of said annulus member.

1 ¹⁵~~15~~. (Once amended) A device as described in claim [15] ¹⁴~~14~~ wherein said annulus member
2 includes a cable pulling device holding means for releasably holding a portion of said cable
3 pulling device therewithin.

1 16. (Once amended) A device as described in claim [1] ¹⁴~~14~~ wherein said cable pulling device
2 [engagement means] mounting frame includes a reaction plate having an enlarged surface for
3 disbursing a reaction force against a cable pulling force generated by said cable pulling device.

1 ¹⁷~~17~~. (Once amended) A device as described in claim [17] ¹⁶~~16~~ wherein said [cable pulling
2 device engagement means includes an annulus member that is releasably engagable with said
3 cable pulling device, and wherein said] annulus member is mountable in relation to said reaction

4 plate such that said reaction plate disburses cable pulling forces exerted on said annulus by said
5 cable pulling device.

1 ¹⁰
~~18.~~ (Once amended) A device as described in claim [18] ¹⁹~~17~~ wherein said [annulus is formed
2 with a cable mounting slot, such that a side portion of said cable can be mounted into said
3 annulus member.] cable pulling device includes a mounting nose piece, and said annulus
4 member includes a bore that is disposed to receive said nose piece therewithin.

1 ¹¹
~~19.~~ (Once amended) A device as described in claim [1 wherein said cable pulling device
2 engagement means includes a cable pulling frame, said cable pulling frame being mountable to
3 said reaction plate.] ¹⁰~~18.~~ wherein said mounting nose piece includes a cable mounting slot for the
4 sideways insertion of said cable within said nose piece, whereby said slot in said nose piece may
5 be aligned with said slot in said annulus member for the sideways mounting of said cable within
6 said annulus member and said nose piece, and wherein said cable pulling device and said nose
7 piece can be turned 90° to capture said cable within said annulus member and said nose piece.

1 ~~20.~~ (Once amended) A device as described in claim [20] ~~18~~ ¹² wherein said cable pulling frame
2 includes a plurality of frame members and a rotatable cable pulley being mounted to said frame
3 members.

1 ¹³
~~21.~~ (Once amended) A device as described in claim [21] ¹²~~20~~ wherein said frame members are
2 disposed to provide a cable mounting gap that allows said frame to be mounted to a side of said
3 cable.

145
22.

12
20

A3

1 (Once amended) A device as described in claim [21] ¹²20 wherein said frame members are
2 disposed to provide a cable engagement path in relation to said frame, such that a side portion of
3 said cable can be mounted within said cable pulling frame and around said pulley.

16
23.

15
22

1 (Once amended) A device as described in claim ¹⁵22 [herein] wherein said frame includes
2 a plurality of leg members that are engaged at an inner end thereof to a base member, and said
3 leg members are engaged at an outer end thereof to further frame members that engage said
4 pulley.

Sub
B8

1 25. ~~(Once amended) A device as described in claim [1] 14 wherein said mole includes a nose~~
2 ~~portion being engagable to said cable, a tapered body portion and a replacement pipe~~
3 ~~engagement portion, said mole further including at least one blade, said tapered body portion~~
4 ~~acting to initially contact, fracture and expand said pipe for the replacement thereof with a length~~
5 ~~of replacement pipe, and said blade acting to cut pipe engagement devices encountered by said~~
6 ~~mole after said pipe has been expanded by said tapered body portion.~~

A4

1 26. A device for the trenchless replacement of in-situ pipe, comprising:
2 a mole;
3 a length of cable, said cable being engagable to said mole;
4 [a cable pulling means including] a cable pulling device including a cable engagement
5 mechanism and a cable pulling device engagement means functioning to provide a mounting
6 structure for said cable pulling device;
7 said cable pulling device engagement means further including a reaction plate having an
8 enlarged surface for disbursing a reaction force against a cable pulling force generated by said
9 cable pulling device, and a cable pulling frame, said cable pulling frame being mountable to said
10 reaction plate and said cable pulling device being mountable to said cable pulling frame.

Sub B9

1 ~~27.~~ (Once amended) A device as described in claim [27] ~~26~~ wherein said cable engagement
2 mechanism [functions to engage said cable in a pulling stroke, release said cable in a recovery
3 stroke, and engage said cable in a further pulling stroke, whereby said cable pulling device
4 conducts a repeatable pulling and releasing cycle of said cable; said cable pulling device]
5 [including] includes at least one pair of cable engaging collets that function[s] to engage said
6 cable on a said pulling stroke and to release said cable on a said recovery stroke, and at least one
7 further pair of collets that function to engage said cable on said recovery stroke and to release
8 said cable on said pulling stroke, and wherein said cable pulling device is formed with a slotted
9 cable insertion structure for the sideways insertion of said cable within said cable pulling device.

A

1 ~~28.~~ (Once amended) A device as described in claim [28] ~~27~~ ¹⁸ wherein said cable pulling frame
2 includes a plurality of frame members and a rotatable cable pulley being mounted to said frame
3 members; and wherein said frame members are disposed to provide a cable engagement path in
4 relation to said frame, such that said cable can be sideways mounted within said cable pulling
5 frame and around said pulley and into said cable pulling device.

20
1 ~~29.~~ (Once amended) A device as described in claim [29] ~~28~~ ¹⁹ wherein said mole includes a
2 nose portion being engagable to said cable, a tapered body portion and a replacement pipe
3 engagement portion, said mole further including at least one blade, said tapered body portion
4 acting to initially contact, fracture and expand said pipe for the replacement thereof with a length
5 of replacement pipe, and said blade acting to cut pipe engagement devices encountered by said
6 mole after said pipe has been expanded by said tapered body portion.

1 30. (Once amended) A mole for use in the trenchless replacement of in-situ pipe,
2 comprising, a nose portion being engagable to a cable, a tapered body portion and a replacement
3 pipe engagement portion, said mole further including at least one blade, said tapered body
4 portion acting to initially contact, fracture and expand said in-situ pipe for the replacement

5 thereof with a length of replacement pipe, and said ~~blade acting to cut pipe engagement devices~~
6 ~~encountered by said mole after said pipe has been expanded by said tapered body portion.~~

Sub B10
1 ~~31. (Once amended) A mole as described in claim [31] 30 wherein said blade includes a~~
2 ~~relatively thin portion that is disposable within said tapered body portion of said mole and an~~
3 ~~expanded portion that projects from said tapered body portion of said mole.~~

1 32. (Once amended) A mole as described in claim [31] 30 wherein said blade is disposed
2 within a slot formed in said mole, and wherein a rearward edge of said blade formed with an
3 angle of approximately 80° with respect to a bottom edge of said blade, and wherein said slot is
4 ~~formed with a shape that corresponds to said angle, such that said blade is held within said slot.~~

AA
1 33. (Once amended) A mole as described in claim [31] 30 wherein a threaded bore is formed
2 within said mole, and wherein a mole engagement fixture is fixedly engaged to an end of said
3 cable, said fixture including a threaded end portion that is threadably engagable with said
4 ~~threaded bore.~~

1 34. (Once amended) A mole as described in claim [34] 33 wherein said fixture further
2 includes a hex [nut] bolt portion integrally formed therewith and provided for the tightening of
3 ~~said threaded portion within said threaded bore.~~

Sub Bn
1 ~~35. (Once amended) A mole as described in claim [31] 30, further including a replacement~~
2 ~~pipe engagement sleeve member for the engagement of said replacement pipe with said mole,~~
3 ~~said sleeve member being formed with cylindrical sidewalls and an internal radially projecting~~
4 ~~wall portion having a bore formed therethrough;~~

5 ~~and wherein said mole is formed with a rearwardly projecting threaded portion that projects~~
6 ~~through said bore, such that a threaded nut may be threadably engaged thereto to secure said~~
7 ~~sleeve upon said mole;~~
8 ~~said sleeve further being adapted for the thermal pressure bonding of said replacement pipe~~
9 ~~thereto.~~

1 37. (Once amended) A frame as described in claim ~~[37]~~ 36 wherein said frame includes two
2 cable pulling device engagement devices, such that two cable pulling devices can operationally
3 function with said frame to pull two cables simultaneously.

1 38. (Once amended) A [device] frame as described in claim ~~[38]~~ 37 wherein two annulus
2 members function as said engagement devices to engage said two cable pulling devices.

1 39. (Once amended) A [device] frame as described in claim ~~[39]~~ 38 wherein the two annulus
2 members are angularly disposed relative to each other, such that two cable pulling devices are
3 operationally engaged therewith.

1 40. (Once amended) A method for the trenchless replacement of in-situ pipe, comprising the
2 steps of:
3 exposing a first end of said pipe;
4 exposing a second end of said pipe;
5 disposing a pulling cable through said pipe between said first end and said second end;
6 engaging a mole to said cable at said first end;
7 engaging a cable pulling device to said cable at said second end; and
8 installing a reaction plate at said second end after said cable is disposed through said pipe, and
9 pulling said mole through said pipe utilizing said cable pulling device.

1 ~~41.~~ (Once amended) A method as described in claim [41] 40 wherein said second end is
2 exposed within an excavated hole, and wherein a reaction plate is disposed against a sidewall of
3 said hole.

1 42. (Once amended) A method as described in claim 41, further including the installation of
2 a cable pulling device engagement frame between said reaction plate and said cable pulling
3 device after said cable is disposed through said pipe.

1 43. (Once amended) A method as described in claim [43] 42 wherein said frame includes a
2 pulley for changing the direction of said cable.

1 44. (Once amended) A method as described in claim [42] 43 wherein said cable pulling
2 device is disposed within said hole.

1 46. A method as described in claim [42 wherein said hole is formed of a minimal size] 40,
2 including the further steps of engaging said cable with a first pair of collets on a cable pulling
3 stroke of said cable pulling device, and engaging said cable with a second pair of collets on a
4 recovery stroke of said cable pulling device.

1 47. (Once amended) A method as described in claim [41] 40 wherein said cable pulling
2 device is a post tensioning ram (PTR).

Please add the following new claims:

Sub
B3

49

1 A cable pulling device, comprising:
2 a first structural frame portion including at least two hydraulic cylinders, and a first pair
3 of cable engaging collets that are engaged with said first structural portion and disposed to
4 frictionally engage a cable that passes within said first pair of collets;
5 a second structural frame portion being movably engaged with said first structural frame
6 portion, and a second pair of collets that are engaged with said second structural frame portion
7 and disposed to frictionally engage a cable that passes within said second pair of collets.

50

1 A cable pulling device as described in claim 49 wherein a piston rod member projects
2 from each of said two hydraulic cylinders, and wherein said second structural frame portion is
3 fixedly engaged to said piston rod members; and
4 wherein said hydraulic cylinders are operable to cause said first structural frame portion
5 and said second structural frame portion to separate and to come together in a reciprocating
6 manner; and
7 wherein said first pair of collets is disposed to engage said cable when said first structural
8 frame portion is separating from said second structural frame portion, and wherein said second
9 pair of collets is disposed to engage said cable when said first structural frame portion is coming
10 together with said second structural frame portion.

A9

REMARKS

In paragraph 1 of the Office Action it is indicated that the group and/or art unit location of the application has changed. Applicant appreciates the notification thereof.

In paragraphs 2 and 3 of the Office Action the abstract is objected to in terms of phraseology and word length. Responsive thereto, Applicant provides herewith a substitute abstract.

In paragraph 4 of the Office Action it is indicated that Applicant misnumbered the original claims, basically omitting a claim numbered 9. It is indicated in paragraph 4 that original claims 10-48 have been renumbered 9-47, and Applicant appreciates the renumbering of the claims. Applicant further notes that new claims 49-50 have been added herein.

A